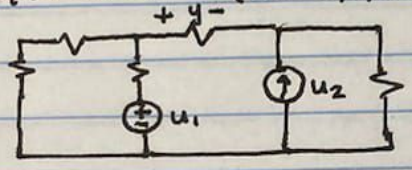
EEE202 Exam #1 Spring 2021

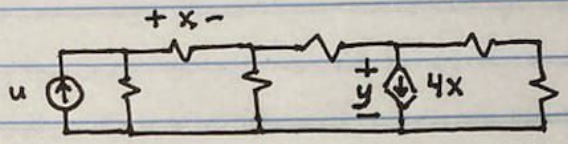
A.A. Rodriguez
GWC 352

Rules: Calculator permitted, 1 8½"x11" sheet permitted
closed books, open minds (All R,L,C=1)

[1] Relate y to $u_{1,2}$



[2] Relate y to u

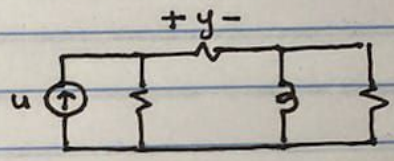


[3] a) Relate y to u (in s-domain)

b) Determine transfer function from u to y.

c) Determine differential equation relating y to u.

d) Determine yss when $u = 1 + 2\sin(0.01t + 30^\circ) + 3\cos(100t + 60^\circ)$.

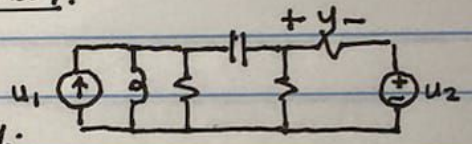


[4] a) Relate y to $u_{1,2}$ (in s-domain).

b) Determine transfer functions from $u_{1,2}$ to y.

c) Determine differential equation relating y to $u_{1,2}$.

d) Determine yss when $u_1 = 1 + 2\sin\sqrt{\frac{2}{3}}t + 3 + 4\cos 100t$.

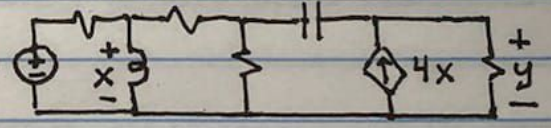


[5] a) Relate y to u (in s-domain).

b) Determine transfer function from u to y.

c) Determine differential equation relating y to u.

d) Determine yss when $u = 1 + 2\sin(0.01t - 90^\circ) + 3\cos(100t)$.



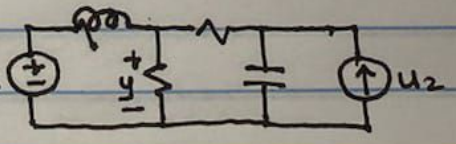
EXTRA CREDIT:

[6] a) Relate y to $u_{1,2}$ (in s-domain).

b) Determine transfer functions from $u_{1,2}$ to y.

c) Determine differential equation relating y to $u_{1,2}$.

d) Determine yss when $u_1 = 1 + 2\sin(100t + 45^\circ)$
$u_2 = 3 + 4\cos\left(\frac{1}{\sqrt{2}}t + 30^\circ\right)$



HOME: [1] Redo the above entirely. [2] When relevant (3d-6d), determine y. (Not just yss!)

[3] Do all of Exam #1 for Spring 2017 & 2018. (You have solutions!)